Applicant: Samuel Steinemann Serial No.: 10/750.446

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IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the

application:

Claims 1-10 (canceled)

11. (Previously Presented) A binary single phase titanium-zirconium alloy suitable

for the production of surgical implants, said alloy comprising a zirconium content of less than 19% by weight but more than 10% by weight, 0.1% to 0.3% by weight of oxygen as a strength

enhancing additive and not more than 1% by weight of other strength enhancing additives and

technical impurities, the alloy being obtainable by a process involving the following steps:

(i) hot forging said alloy at a temperature above alpha/beta phase transition; and

(ii) rapidly cooling said alloy to obtain the single phase titanium-zirconium alloy;

wherein said alloy is subsequently cold processed and has a tensile strength of at least

769 MPa.

12-13. (Cancelled)

14. (Previously Presented) Titanium-zirconium alloy as claimed in claim 11, wherein

the zirconium content is 14-15% by weight.

15. (Previously Presented) A device selected from the group consisting of implants in

dental surgery, abutments and elements for suprastructrues comprising the titanium-zirconium

alloy of claim 11.

16. (Previously Presented) A process for producing a surgical implant, said process

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comprising incorporating into said implant a binary single phase titanium-zirconium alloy, said alloy comprising a zirconium content of less than 19% by weight but more than 10% by weight, 0.3% by weight of oxygen as a strength enhancing additive and not more than 1% by weight of other strength enhancing additives and technical impurities, the alloy being obtainable by a process involving the following steps:

- (i) hot forging said alloy at a temperature above alpha/beta phase transition; and
- (ii) rapidly cooling said alloy to obtain the single phase titanium-zirconium alloy;

wherein the forging process is carried out at temperatures above 850°C, the alloy is then cooled rapidly and subsequently cold worked; and

wherein said alloy has a tensile strength of at least 769 MPa.

- (Previously Presented) A surgical implant comprising the titanium-zirconium alloy of claim 11.
- (Previously Presented) An implants for dental surgery, abutments and elements for suprastructures as in Claim 17.
- (Previously Presented) The titanium-zirconium alloy as in claim 11, wherein the alloy is hot forged and/or cold worked prior to processing into an implant.
- 20. (Previously Presented) A process for producing a surgical implant, said process comprising incorporating into said implant a binary single titanium-zirconium alloy, said alloy comprising a zirconium content of less than 19% by weight but more than 10% by weight, 0.3% by weight of oxygen as a strength enhancing additive and not more than 1% by weight of other strength enhancing additives and technical impurities, said process comprising:

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- (a) forging the alloy in the range of alpha/beta phase transition at 770°C to 830°C;
- (b) cooling the alloy rapidly; and
- (c) cold working the alloy;

wherein said alloy has a tensile strength of at least 769 MPa.

- (Previously Presented) The titanium-zirconium alloy as in claim 11, comprising up to 0.5% by weight of hafnium as part of said technical impurities.
- 22. (Previously Presented) A surgical implant comprising a binary single phase titanium-zirconium alloy, said alloy comprising a zirconium content of less than 19% by weight but more than 10% by weight, 0.1% to 0.3% by weight of oxygen as a strength enhancing additive and not more than 1% by weight of other strength enhancing additives and technical impurities, the alloy being obtainable by a process involving the following steps:
 - (i) hot forging said alloy at a temperature above alpha/beta phase transition; and
 - (ii) rapidly cooling said alloy to obtain the single phase titanium-zirconium alloy;

wherein said alloy is subsequently cold processed and has a tensile strength of at least 769 MPa.

 (Previously Presented) The surgical implant according to Claim 22, wherein the zirconium content is 14-15% by weight.